

Notice of Allowability

Application No.

10/687,440

Examiner

Michael P. Ferguson

Applicant(s)

O'BRIEN ET AL.

Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment 08 February 2005.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ The drawings filed on 29 March 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 02/02/05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the abstract, in line 2 after "an interface cone" deleted "is described herein".

2. The following is an examiner's statement of reasons for allowance:

As to claim 1, Braccio et al. (US 4,905,938) disclose the claimed reusable self-aligning precision latch with the exception of comprising a flexured ball assembly having a ball and a floating clamp plate in contact with the ball, the floating clamp plate maintained perpendicularly to an axis of the flexured ball assembly by a compliant member.

As to claim 10, Braccio et al. disclose the claimed method for latching with the exception of comprising positioning a plurality of clamping pawls over a floating clamp plate of the flexured ball assembly, wherein the clamp plate is in contact with a ball and maintained pivotably perpendicular to an axis of the flexured ball assembly by a compliant member.

It would not have been obvious to one having ordinary skill in the art at the time the invention was made to modify a latch as claimed by Braccio et al. to have the above mentioned elements as the prior art neither teaches nor suggests such modifications.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Ferguson whose telephone number is (703)308-8591. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703)308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MPF
02/23/05



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www.ratnerprestia.com**F A C S I M I L E C O V E R S H E E T**Date: February 2, 2005Time: 4:30 p.m.Appln. No.: 10/687,440Filing Date: October 16, 2003Atty. Docket No.: ITDE-PSSD-134USFirst Inventor Michael J. O'BrienConf. No.: 8770Title of Appln.: HIGH RELIABILITY PRECISION LATCH

TO:	Examiner Michael P. Ferguson
COMPANY:	U.S. Patent and Trademark Office
FROM:	Brett J. Rosen
FAX TELEPHONE:	703-746-7462
OFFICE TELEPHONE:	
TITLE OF DOCUMENT:	Amended Claims for Discussion

Total Number of Pages: 3 (including this form)**COMMENTS**

Examiner Ferguson:

*It was a pleasure to speak with you this afternoon. As discussed, I have attached the proposed amendments to claims 1, 8 and 10.
Best regards.*

Brett J. Rosen

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Please notify us immediately if you have not received the number of pages indicated above.

Preliminary Amendments to Claims

Listing of Claims:

1. (Currently Amended) A reusable self-aligning precision latch, comprising:
 - a) a latch body for mounting a latch assembly, including an interface cone;
 - b) a lead screw, coupled to the latch body on one end, that pivots at an interface on the latch body allowing for self-alignment;
 - c) a drive cam having a plurality of surfaces and positioned on the lead screw engaging a plurality of linkage assemblies such that at least two links are driven;
 - d) a flexured ball assembly having a ball and a floating clamp plate in contact with the ball, said floating clamp plate maintained perpendicularly to an axis of the flexured ball assembly by a compliant member,
said flexured ball assembly clamped by the plurality of linkage assemblies to the latch body with a the floating pivoting clamp plate such that all clamping forces between the floating pivoting clamp plate and the latch body are equalized; and
 - e) a motor for closing and opening the self-aligning precision latch by turning the lead screw to apply and release, respectively, the clamping forces between the pivoting clamp plate and the latch body.

8. (Currently Amended) The reusable self-aligning precision latch claimed in claim 1, wherein the flexured ball assembly includes:
 - a) ~~a ball;~~
 - b) ~~a floating clamp plate, in contact with the ball, and maintained perpendicularly to an axis of the flexured ball assembly by a compliant member; and~~
 - c) ~~a flexure having a retaining flange for capturing the compliant member prior to latching.~~

10. (Currently Amended) A method for latching, employing a kinematic, self-aligning precision latch, comprising the steps of:

- a) holding the precision latch open in its initial state to provide unobstructed axial and radial ball seat clearances to receive a flexured ball assembly;
- b) positioning a plurality of clamping pawls over a floating clamp plate of the flexured ball assembly to fully capture the clamp plate preventing displacement from a latch seat;
- c) making contact with the clamp plate with a follower link in a manner as to equalize forces on the clamp plate wherein the clamp plate is in contact with a ball and maintained pivotably perpendicular to an axis of the flexured ball assembly by a compliant member;
- d) applying a force to the clamp plate by effectively grounding the follower link of a four bar mechanism, thereby, forming a simple lever to obtain mechanical advantage at the clamp plate;
- e) providing a clamping force on the clamp plate by deforming a coupler link via a cam; and
- f) locking the precision latch in its final state with action from a fixed displacement portion of the cam.